

Reflection in Higher Education: A Concept Analysis

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ABSTRACT: Despite the widespread adoption of reflective practices across many fields of study, a critical analysis of the concept of reflection and its application within higher education has been lacking. This article provides an examination of several major theoretical approaches to reflection including those of Dewey; Loughran; Mezirow; Seibert and Daudelin; Langer; Boud, Keogh and Walker; and Schön. Commonalties in terminology, definitions, antecedents, context, process, outcomes, and techniques to foster reflection are addressed. The implications of the findings for higher education are explained.

KEY WORDS: reflection; reflective practitioner; reflective practices.

Since the publication of Schön's (1983) seminal work, *The Reflective Practitioner*, numerous articles and books on the topic of reflection have appeared in the educational literature (Calderhead & Gates, 1993; Horwood, 1989; Loughran, 1996; Robinson & Wick, 1992; Seibert & Daudelin, 1999). The importance of reflective skills as a means of increasing students' learning has been widely touted across many fields including teacher education (Calderhead & Gates, 1993), nursing (Pierson, 1998; Riley-Doucet & Wilson, 1997), and professional education (Schön, 1983). In addition, practica, training programs, and techniques designed to foster reflective practices among students have been developed and used across a variety of educational settings (Loughran, 1996; Rooda & Nardi, 1999; Schön, 1987; Zeichner & Liston, 1987).

This scrutiny of the concept of reflection leaves one with the impression that the concept is well understood in educational circles. Closer examination, however, reveals that this is hardly the case. Researchers use multiple terms to describe reflective processes including reflection-in-action, (Schön, 1983), metacognitive reflection (Fogarty, 1994), reflective learning (Boyd & Fales, 1983), critical reflection (Mezirow & Associates, 1990), reflective thinking (Dewey, 1933), and mindfulness (Langer, 1989; 1997). Reflection also is used interchangeably by some

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authors with the terms introspection (Sherman, 1994) and meditation (Holland, 2000).

In addition to the confusion regarding terminology, there is a lack of clarity in the definition of reflection, its antecedent conditions, its processes, and its identified outcomes. Only a few authors (Boud, Keogh & Walker, 1985; Dewey, 1933; Loughran, 1996; Mezirow, 1991; Seibert & Daudelin, 1999) provide readers with fully developed models of reflection, and two of these are context specific (Loughran, 1996; Seibert & Daudelin).

There also are questions about the efficacy of various techniques to foster students' reflective skills. Research suggests that reflective methods such as journaling, role modeling, use of questions, and critical incidents help individuals develop skills in reflection and enhance the learning process (Brookfield, 1990; Loughran, 1996; Seibert & Daudelin, 1999; Sparks-Langer & Colton, 1991). However, few studies have compared the outcomes of reflective and more traditional methods (Lowe & Kerr, 1998).

This article seeks to clarify the ambiguity regarding the concept of reflection as it applies to teaching and learning in higher education. To this end, I first provide an in-depth analysis and synthesis of the selected theoretical approaches and then explore the implications of reflection for practice.

Analysis and Synthesis of Major Theoretical Approaches

To analyze the concept of reflection, I identified several theoretical approaches and examined them in terms of their various component parts. No attempt was made to include an exhaustive review of all reflective approaches or models, but rather to identify those that contributed to a broad and ultimately integrated understanding of the concept. Approaches explored include those of Dewey (1933); Schön (1983); Boud, Keogh and Walker (1985); Langer (1989); Loughran (1996); Mezirow (1991); and Seibert and Daudelin (1999). The analyses revealed both similarities and differences across several components, i.e., terminology, definitions, antecedents, context, processes, outcomes, and techniques to foster reflection. Each of these components is discussed below. In addition, the common factors are summarized in Table 1.

Terminology

Three broad categories of terms emerged from the analysis: (1) general terms, (2) terms based on the timing of reflection, and (3) terms

Table 1
Common Factors Identified Across Various Theoretical
Approaches to Reflection

Terms	<i>General terms</i> Reflective thought Managerial reflection Mindfulness <i>Terms based on timing</i> <ul style="list-style-type: none"> ● Before Anticipatory reflection ● During Reflection-in-action Contemporaneous reflection Thoughtful action with reflection Active reflection ● After Reflection-on-action Retrospective reflection Reactive reflection Proactive reflection <i>Terms based on content</i> Content Process Premise
Antecedents	Triggered by unusual or perplexing event Requires readiness, willingness and conscious choice on part of learner
Contextual Factors	Context influences reflection either positively or negatively. Solutions arrived at in one context may not be applicable in another. Context includes both individual and environmental factors. Contextual factors can be altered.
Definitional Components	Cognitive and affective process or activity Requires active engagement on part of individual Triggered by an unusual or perplexing situation or experience Involves examining one's responses, beliefs, & premises Results in integrating new understanding gained into one's experience
Process	(1) Identify a problem and make a deliberate decision to seek a solution. (2) Collect additional information regarding the problem. (3) Plan a solution and make a decision to act. (4) Take action based on the plan.
Methods	Education (e.g., reflective practica based on models of arts education) Use of a coach or mentor Use of structured experiences used alone or in group setting (e.g., questions, critical incidents, journals)
Outcomes	Learning Enhanced personal and professional effectiveness

based on the content of reflection. General terms included reflective thought (Dewey, 1933), managerial reflection (Seibert & Daudelin, 1999), reflection (Boud, Keogh & Walker, 1985), and mindfulness (Langer, 1989). Terms based on timing include those that describe reflection occurring before, during and/or after a challenging experience. Loughran (1996) uses the term anticipatory reflection to describe reflection that occurs *before* a developmental experience. In addition, Schön's (1983) reflection-in-action, Loughran's (1996) contemporaneous reflection, Seibert and Daudelin's (1999) active reflection, and Mezirow's (1991) thoughtful action with reflection are used to describe reflective processes that occur *during* a developmental or challenging experience. In contrast, the terms reflection-on-action (Schön, 1983), retrospective reflection (Loughran, 1996), retroactive reflection (Mezirow, 1991), and proactive reflection (Seibert & Daudelin, 1999) are used to describe reflective processes that occur *after* or during a hiatus from a challenging experience. The third group of terms describes the content of the reflective process—i.e., the information upon which the individual reflects. An example of this is Mezirow's (1991) use of the terms content, process, and premise reflection in his model of transformative learning.

In summary, among the theorists whose work was analyzed here, no fewer than 15 different terms were used to describe the reflective process. In some cases, authors developed different terms to describe much the same thing. However, it is not possible to determine this similarity based on the terms alone. Confusion regarding terms to describe reflection is even more common in the general press where terms such as self-reflection, reflection, contemplation, introspection, and meditation are sometimes used interchangeably (Holland, 2000; Sherman, 1994). The situation is further confused by use of the term reflection as a noun, a verb, an adjective, a process, and/or an outcome. Consequently, it is difficult to determine what is intended when reflection in teaching and learning is discussed. Further dialogue and research are needed to simplify and clarify terminology so that faculty and students understand each other as well as possible. Use of a generic term such as reflective thought or even simply, reflection, might be the most beneficial in ensuring conceptual clarity.

Definitions

Analysis of the definitions revealed important commonalities. All authors clearly stated or at least strongly implied that reflection is a

cognitive process or activity (Boud et al., 1985; Dewey, 1933; Langer, 1989; Loughran, 1996; Mezirow, 1991; Schön, 1983; Seibert & Daudelin, 1999). In addition to the cognitive dimension, Boud et al. (1985) emphasized the importance of the emotions of the individual in the reflective process.

The authors' general definitions also implied that reflection requires the individual's active engagement. Dewey described reflective thought as involving "active, persistent and careful consideration" (1933, p. 9) while Loughran called reflection a "deliberate and purposeful act" (1996, p. 14). Mezirow defined it as "... the process of critically assessing" (1991, p. 104), and Boud et al. (1985) described it as "those... activities in which individuals engage to explore their experiences" (p. 19). Lastly, Seibert and Daudelin (1999) used a series of action words such as "taking," "bringing," "filtering," "examining" and "making sense of" to describe their process of managerial reflection.

The definitions also imply that reflection involves examining the manner in which one responds to a given situation (Loughran, 1996; Schön, 1983). This includes both an exploration of the negative and positive emotions triggered by an experience (Boud et al., 1985) and the underlying beliefs or premises that may affect one's response (Dewey, 1933; Mezirow, 1991). Ultimately, the intent of reflection is to integrate the understanding gained into one's experience in order to enable better choices or actions in the future as well to enhance one's overall effectiveness. Boud et al. (1985) stated that reflection "lead[s] to new understandings or appreciations" (p. 19) while Seibert and Daudelin (1999) noted that it "translate[s] experience into learning" (p. xi) and "... gives[s] meaning to experience" (p. xvi). Schön (1983) contended that reflection-on-action results in the development of a new theory or frame and contributes to the acquisition of professional knowledge; and Mezirow (1991) believed that reflection is the process by which individuals transform their meaning schemes and meaning perspectives, resulting in transformational learning.

In summary, the seven theoretical approaches revealed several common definitional elements. These included reflection as a cognitive and affective process or activity that (1) requires active engagement on the part of the individual; (2) is triggered by an unusual or perplexing situation or experience; (3) involves examining one's responses, beliefs, and premises in light of the situation at hand; and (4) results in integration of the new understanding into one's experience. This synthetic definition of reflection appears conceptually coherent; however,

additional examination and testing are required to validate the findings further.

Antecedents

Analysis revealed two common antecedents of the reflective process. First, most authors agreed that an event or situation beyond the individual's typical experience must occur if the reflective process is to be triggered. Seibert and Daudelin (1999) described this as a "developmental experience" while Loughran (1996) described it as a "problematic or puzzling situation that needs to be attended to." Schön stated that the reflective process is triggered by situations of complexity, uncertainty, instability, uniqueness or values-conflict; and Mezirow (1991) contended that reflection occurs only when one experiences difficulty in understanding a situation or requires guidance. Dewey also identified the presence of a triggering event but described it in terms of the response of the individual. He stated that reflective thought involves "a state of doubt, hesitation, perplexity [or] mental difficulty" (Dewey, 1933, p. 12). Boud et al. (1985) took a somewhat different approach in describing reflection as "... a form of response of the learner to experience" (p. 18). Thus, in their model, experience in general, which includes the total response of the individual to an event, is seen as an antecedent of reflection.

A second key antecedent of reflection identified in the literature is the individual's readiness and willingness to engage in the reflective process. Both Dewey (1933) and Loughran (1996) contended that reflective thought requires open-mindedness, wholeheartedness and responsibility on the part of the learner. In addition, Langer (1989) stated that mindfulness can occur only when the individual makes a conscious choice to be mindful. This sentiment is echoed by both Boud et al. (1985), who stated that the intentions of the learner are critical in the reflective process and by Mezirow (1991), who stated that conscious awareness and deliberate choice are prerequisites to reflection.

These antecedents highlight the importance of the nature of the experience and the development of the learner in the process of reflection. Both the learner and the experience itself can serve to either facilitate the process of reflection or create barriers that inhibit it. Boud and Walker's (1993) work stressed the need to understand and discover such barriers to reflection. They also delineated the need to examine how barriers operate and to work to confront or transform them so

that reflection and learning can proceed. Boud and Walker (1993) also recognized the importance of preparation in the reflective process—preparation that provides an opportunity to focus on conditions that may influence reflection.

Context

Examination of the various approaches indicates that contextual factors are perceived as important in the process of reflection. According to Langer (1989), “Contexts control our behavior, and our mindsets determine how we interpret each context” (p. 35). Langer’s approach indicates that the context may be influenced by a wide variety of individual and environmental factors, but also that contextual factors are amenable to alteration. This sentiment is echoed by Boud and Walker (1993) who included both the learner and the milieu as factors influencing the experience of the learner and requiring attention in preparing for an experience.

Seibert and Daudelin’s (1999) model explored the influence of specific contextual variables on reflection that occurs during a developmental experience. They stated that there must be an environment providing conditions conducive to reflection. These conditions include autonomy, feedback, access and connection to others, stimulation by others, and significant performance demands. Similarly, if the environment lacks autonomy, effective feedback, opportunities for connection to others, and appropriate challenge, reflection is unlikely to occur. Loughran (1996) contended that solutions to problems arrived at through reflective processes are context bound and may not be universally appropriate or applicable. He also stated that contextual factors influence what the individual apprehends and attends to during the reflective process. Seibert and Daudelin (1999) echoed this sentiment with their contention that contextual factors affect the psychological state of the individual. Their research supports the view that enabling contextual factors help to produce positive psychological states and thus promote active reflection among managers.

The above indicates that reflection may be influenced by the developmental situation itself, by factors within the individual, and by factors present within the larger environment. Thus, the reflective process appears most likely to be successful when both individual and environmental factors are managed so that the context provides an appropriate balance of challenge and support. Further research is needed to identify additional environmental factors that influence reflection and also

how such factors influence and are influenced by the psychological and affective states of the individual learner.

Process of Reflection

Analysis of the various approaches to reflection revealed both wide variability and a number of commonalities in the process by which reflection is thought to occur. Significant variations were noted in the descriptions of the process. Some authors delineated a three stage process (Boud et al., 1985), others a five phase process (Dewey, 1933; Loughran, 1996), and still others an eight step process (Mezirow, 1991). In contrast, some did not describe the steps in the process at all (Schön, 1983; Langer, 1989). Some viewed the steps of reflection as sequential (Seibert & Daudelin, 1999) while Dewey (1933) and Loughran (1996) contended that the steps of the reflective process need not follow any particular order. In addition, some theorists stated that the reflective process varies depending on the time during which reflection occurs. Seibert and Daudelin (1999), for example, described a different series of steps for active reflection (which occurs during action) than they did for proactive reflection (which occurs after a developmental experience). Others saw the steps as essentially the same regardless of the timing of reflection (Loughran, 1996). These variations make it difficult to teach the reflective process and to determine the specific steps of reflection in order to practice them.

Despite these variations in process, however, a number of commonalities also were evident. First, across nearly all approaches, the process begins with the identification of a problem and a deliberate decision to seek a solution. Boud et al. (1985) described this as a deliberate and intentional return to the experience. Langer (1989) described it as a choice to be mindful and a decision about what to be mindful. Seibert and Daudelin (1999) discussed confronting a developmental challenge while Schön (1983) described experiencing surprise or puzzlement in a unique or uncertain situation. Dewey (1933) described the process of problem identification as "... an act of searching, hunting, inquiring, to find material that will resolve the doubt, [and] settle and dispose of the perplexity" (p. 12). In Dewey's (1933) five-phase model, which is also used by Loughran (1996), problem identification incorporates the first two phases, suggestion and intellectualization. Problem posing or interpretation is also the first step in Mezirow's (1991) model of reflective action.

A second general step in most models is collecting additional information regarding the problem prior to taking further action. In Dewey's

(1933) model, data collection includes the phases of hypothesis and reasoning while in Mezirow's (1991) model it includes the steps of scanning; propositional construal; reflection on content, processes, or premises; and imaginative insight. Schön (1983) described data collection as reflecting on the phenomenon in question and the prior understanding implicit in one's behavior. Langer (1989) viewed it as the continual creation of new categories, openness to new information and awareness of more than one perspective. Seibert and Daudelin (1999) described it as acquiring, organizing, and examining information; making assumptions; and drawing conclusions. In the model of Boud et al. (1985), data collection involves first attending to feelings and then re-evaluating the experience through the elements of association, integration, validation, and appropriation.

Data collection results in a plan and decision to act. This is an important, though not always clearly delineated, step in most models in that it presupposes that something important in the individual's thinking has changed. Boud et al. (1985) stated that reflection prepares the individual for new experiences and leads to new skills, ideas and even new cognitive maps. Mezirow (1991) indicated that the process leads to a new interpretation involving a change in the individual's meaning schemes or a transformation of meaning perspectives. Schön (1983) also implied that a change in thinking occurs in that reflection leads to new understanding or a new theory or frame. Similarly, Seibert and Daudelin (1999) implied that a change in thinking occurs as part of their process of proactive reflection. Reflection as a means of identifying, scrutinizing, and reconstituting the assumptions that underlie one's thoughts and actions has also been proposed by Brookfield (1990).

A final step in most models is taking action based on the reflective process. Dewey (1933) and Loughran (1996) described this as testing and Schön (1983) as carrying out an experiment to generate new understanding of the phenomenon. In the models of Seibert and Daudelin (1999), Boud et al. (1985), and Mezirow (1991), this step is called acting.

The process of reflection does not always have a defined beginning and end. Thus, it should be viewed as continuous, much like an ever-expanding spiral in which challenging situations lead to reflection and ultimately to new interpretations or understanding. These new understandings may then lead to new challenges and additional reflection. Each new experience with reflection should lead the individual to broadened and deepened understanding, an enhanced array of choices, and a more sophisticated capacity to choose among these choices and implement them effectively.

While analysis revealed significant commonalties, further dialogue and research are needed to more clearly differentiate the essential steps in the reflective process. The steps of the reflective process appear coherent—at least conceptually, but they need to be validated in practice.

Techniques to Foster Reflection

Most authors explained techniques that can foster reflection. In addition, most stressed the importance of education in helping individuals develop habits of reflective thought. This is not surprising given that several models (Dewey, 1933; Loughran, 1996; Mezirow, 1991; Schön, 1983) emerged from the authors' experiences in working with students in formal educational settings. In particular, Dewey (1933) contended that education (i.e., the training of the mind) can help students develop the ability to think reflectively. He suggested several strategies to accomplish this goal including physical activities, use of language (e.g., enlarging the student's vocabulary, rendering vocabulary more precise and forming habits of consecutive discourse), and the use of observation and recitation. In addition, Mezirow (1991) contended that using principles of andragogy in one's teaching (i.e., assisting adults to learn in a manner that enables them to be self-directed) can help develop habits of reflection in students.

Schön (1987) proposed the use of what he terms "reflective practica" to educate professionals for reflective practice. Drawing on the example of conservatories of music and dance, studios of art and design, and apprenticeships in the crafts, he suggested redesigning professional education "to combine the teaching of applied science with coaching in the artistry of reflection-in-action" (1987, p. xii). Key to Schön's reflective practica is the role of the coach or mentor who seeks to guide students in developing habits of reflective practice by establishing a mutual dialogue that involves processes such as listening, telling, demonstrating, and imitating.

The role of the coach or mentor in fostering habits of reflective thinking among students is also emphasized by Loughran (1996). In particular, Loughran discussed his personal use of role modeling as a way of demonstrating reflection for his students. He accomplishes this modeling by thinking out loud in the classroom about his pedagogy and choices and also by keeping a reflective journal that he makes available to students.

Seibert and Daudelin (1999) discussed the mentor's role in enhancing proactive reflection among managers. The authors conducted a study in which one-time, one-hour proactive reflection sessions were held with three different groups of managers. One group used a series of questions to reflect alone, another group reflected with a group of peers, and the third used the questions to reflect with a tutor. Analysis of the data revealed that both the group that reflected alone and the group that reflected with a tutor reported significantly more learning than the group that reflected with peers.

Another method that appears to foster reflection is the use of structured experiences. These experiences provide a framework for guiding individuals in broadening and deepening their analysis and synthesis of challenging situations and integrating these challenges effectively to enhance their professional effectiveness. Such experiences may be used by groups or by individuals. Examples include the use of a series of structured questions to reflect on a specific developmental experience (Seibert & Daudelin, 1999), seminar group discussions (Loughran, 1996), the use of critical incidents (Brookfield, 1990), and the use of reflective journals (Loughran, 1996) or writing portfolios (Walker, 1985).

A different approach to fostering reflection has been proposed by Langer (1989). She suggests that activities such as changing contexts, deliberately creating new categories, and exploring multiple perspectives can facilitate mindfulness. As individuals choose to be mindful by creating categories and exploring multiple perspectives in the midst of challenging situations, they actively engage in the reflective process and ultimately enhance their professional effectiveness.

The above indicates that reflection is most likely to be facilitated with the use of deliberate and planned techniques. Specifically, research indicates that reflection can be facilitated through individual and group activities as well as with the use of a skilled mentor or coach. In addition, writing assignments of various types as well as directed discussions appear to be effective in enhancing students' reflective skills.

Outcomes of Reflection

The major outcome of reflection as either stated or implied by most authors is learning. Seibert and Daudelin stated that "for learning to actually happen, the manager must extract from experience the lessons it provides. Reflection is seen as the primary way to do this" (1999, p. 5).

Loughran (1996) and Mezirow (1991) also viewed learning as the outcome of reflection. According to Loughran (1996), "reflection helps the individual to learn from experience because of the meaningful nature of the inquiry into that experience" (p. 14). Mezirow (1991) took this a step further and contended that reflection may lead to transformative learning—a process he described as resulting in new or transformed meaning schemes and perspectives. Thus, reflection may enable individuals to change their habits of expectation and, as a result, develop more accurate perceptions, avoid premature cognitive commitments, and achieve greater flexibility and creativity (Mezirow, 1991). In short, as individuals learn through reflection, they are able to enhance their overall personal and professional effectiveness.

Enhanced overall effectiveness as an outcome is also implied by Langer (1989) in her discussion of the benefits of mindfulness. Other benefits identified by Langer include increased capacity for change; increased control of the context; greater freedom of action; and increased flexibility, productivity, and innovation. These benefits indicate that mindfulness may alter the way in which individuals view the world and thus result in learning.

Boud et al. (1985) also delineated several outcomes of the reflective process. These include (1) new perspectives on experience, (2) changes in behavior, (3) readiness for application, and (4) commitment to action. Further, in keeping with their emphasis on the affective components of reflection, the authors described possible emotional outcomes such as changes in feelings, attitudes and values.

Dewey (1933) identified what he called three values of reflective thinking: (1) the possibility of action with a conscious aim, (2) the possibility of systematic preparations and inventions, and (3) the enrichment of things with meaning. These values might also be considered the outcomes of reflective thought. Dewey clearly believed that "... education ... is vitally concerned with cultivating the attitude of reflective thinking, preserving it where it already exists, and changing looser methods of thought into stricter ones whenever possible" (1933, p. 78). He also contended that learning includes both retention of information and the comprehension of that information in terms of the relationships of the various pieces to one another. Comprehension is only possible through "... constant reflection upon the meaning of what is studied" (1933, p. 79). This implies that the overall outcome of reflective thinking is learning.

Schön (1983) identified several outcomes of reflection-in-action. These include a new understanding of situations of uncertainty, more

effective coping with divergent situations of practice, a new theory or frame, a change in a troublesome situation, and the acquisition of professional knowledge. All of these outcomes imply that learning happens through the process of reflection-in-action.

Implications for Incorporating Reflective Practices

As delineated in the above analysis and synthesis, the concept of reflection has much to offer today's higher education. Reflection can enhance learning and overall personal and professional effectiveness—both of which are critical aims of the educational process. In spite of its potential for positive outcomes, however, reflection remains a challenging concept for educators to apply in practice. The common factors identified across the theoretical approaches (see Table 1) provide a framework for examining its implications for higher education. Specific implications in relation to terminology/definitions, antecedents, context, process, methods, and outcomes of reflection as well as the value of experience in the reflective process are discussed below.

Terminology and Definitions

Although the concept of reflection lacks definitional clarity, significant commonalities were evident among the theoretical approaches. These similarities seem to support reflection as a generic concept that is applicable across contexts. To facilitate the generalizability of reflection, however, a common terminology for, and definition of, reflection is needed. Faculty who choose to incorporate reflective practices into their teaching would thus do well to choose their terms carefully and define them clearly. With regard to terminology, further dialogue among educators and researchers is recommended to determine the most appropriate terms to describe reflection. Specifically, there is a need to ascertain which term or terms will provide the widest understanding of the meaning of reflection. Terms could be chosen that would describe the concept generally or specifically—e.g., based on the timing or content of reflection. However, use of a general term is likely to provide the widest understanding and application. With regard to definitions, an integrated definition of reflection that incorporates a description of the process, antecedents, and outcomes of reflection is most likely to lead to common understanding among educators.

Antecedents

All of the theories of reflection suggest a starting point for the reflective process that is less than positive—i.e., developmentally challenging, uncomfortable, or perplexing. This suggests that in order to teach students how to reflect educators need to challenge them or make them uncomfortable with the status quo. Yet, many students come to higher education today socialized by a customer service world, expecting customer service treatment. They want, and even expect, their educational experiences to be easy, simple, and unchallenging. A process of reflection can thus evoke negative reactions if students do not share the same values. Conversely, institutions need to assure that they do not rationalize inappropriate challenges in the name of reflection. What is needed is an appropriate balance of challenge and support. This balance may best be achieved by seeking to work in what John Keats called “negative capability”—i.e., “being in uncertainties, mysteries, and doubts without any irritable reaching after fact and reason” (cited in Nyberg, 1971, p. 5). This suggests that educators should not only value and even encourage challenges, but that they should invite students to do so as well.

Another important antecedent of reflection is a starting point that is problem-based or situational. This suggests that problems should be the focus of inquiry in higher education—not only problems that are generalizable into scholarly research, but also personal problems that educators tend to discount because they seem peripheral to the content of the curriculum. The theoretical approaches support the notion that reflection begins with a problem and that it is the experience of the problem upon which the student reflects. This has critical implications for designing curricula and providing instruction as well as advising students and assessing their work. The model of technical rationality (i.e., the theories and facts) that serves as the foundation for most fields of study can be nicely packaged and delivered and as a result, inappropriately feed students’ assumptions that technical rationality is enough or all there is. Reflective processes by their very nature are inductive (beginning with experience) rather than deductive (beginning with textbooks and theories). Rather than succumb to this seeming dualism between the inductive and deductive, the challenge is to integrate *both* into the learning process in such a way that students are able to bridge the artificial gulf between ideas and actions and, hence, learn ideas for and in action.

A third antecedent of reflection with important implications for higher education is openness, willingness, and engagement on the part

of the learner. This presupposes that reflection is likely to occur only if learners possess these traits. However, not all students come to higher education open, willing and engaged. So, how can educators foster these traits in their students? How can educators remove or diminish those forces that conspire against openness or reinforce passive hoop-jumping on the part of students? These questions are not easily answered, but institutions, programs, and faculty serious about fostering reflection in their students would do well to explore them further.

Context

Reflection tends to be a very personal process. As such, the learning gained through the reflective process and the transformation of meaning schemes or meaning perspectives may be specific to the individual and to the context in which the reflection has occurred. Educators seeking to use reflective practices in their work with students would do well to be sensitive to issues of context and to individualize their approaches based on the specific situation and needs of a given student.

One way for faculty to accomplish this is to establish an environment rich with factors that support reflection. Such factors may include autonomy, effective feedback, connection to peers, access to faculty, and appropriate challenges (Seibert & Daudelin, 1999). Successful management of the reflective learning milieu also requires both careful planning in the preparation phase and ongoing attentiveness as the reflective process unfolds (Boud & Walker, 1993). It also requires flexibility on the part of the faculty member and a willingness to adapt various environmental factors in the moment. This is particularly critical in light of the fact that individual students also bring a unique set of cognitive and affective developmental factors with them to higher education—factors that interact with the learning environment to determine educational outcomes. The challenge for educators is to sort through these complex contextual factors and establish conditions conducive to learning and reflection.

Process of Reflection

The process by which reflection is thought to occur differs across approaches which makes it difficult to teach the reflective process and to determine the specific steps of reflection. On the other hand, educators need to be wary of the scholarly tendency to quantify complex processes in order to understand them. Reflection may well be a process

that defies easy quantification. If this is the case, the challenge for educators is to determine how to clarify the process of reflection without falsely formularizing or oversimplifying it. Perhaps what is needed is to invite students into a process that is not so pat and organized as to be false, but at the same time encourages them to appreciate the value of uncertainty. Within such a process, qualities would take their place alongside quantities, relationships would take their place alongside objects, and ambiguity would take its place alongside order.

Faculty also need to be aware that even though continuous reflection is not a realistic goal, increasing the use of reflective processes on the part of faculty and students remains a worthy objective. One cannot be mindful or reflective about everything all of the time. Instead, the goal, for both educators and students should be to be capable of making a conscious choice to be reflective (mindful) and to be intentional regarding what to be reflective about (Langer, 1989).

The Value of Experience

The reflective process places an inherent value on the experience of the individual. Indeed, across all approaches to reflection, it is personal experience upon which the individual reflects. In contrast, western epistemological and educational traditions have tended to reject the value of primary experience in favor of more modified, packaged, and organized abstractions of secondhand experience (Reed, 1996). The outcome of this rejection has been the erosion of our mental resources—what Reed called “the ability to experience the world around us accurately and to think carefully . . .” (p. 158). He called for a renewed focus on primary experience as a means of redressing the overemphasis on secondhand experience or what Schön (1983) called technical rationality. Reflection provides a vehicle to shape and refine primary experiences into meaningful learning. Thus, if educators are to incorporate reflective practices into their teaching and advising, they first must learn to value students’ experience as a primary source of knowledge and then develop techniques to make use of these experiences in the educational process.

Techniques to Foster Reflection

Techniques suggested across the theoretical approaches included the importance of a coach or mentor; the use of structured experiences either alone or in a group setting, and attentiveness to the timing of reflection.

Central to the development of reflective skills in students—whether reflection in the moment or after the fact—is the presence of a coach or mentor. The question is how to develop a mentoring relationship with students given the current realities of increasing teaching and advising loads as well as the increasing part-time nature of higher education—both part-time faculty and part-time students. Being a mentor presupposes that one has sufficient rapport with an individual student to enable one to probe and facilitate reflection without incurring defensiveness. It also presupposes a rapport that explicitly or implicitly offers both permission to intervene and sufficient knowledge of the individual student to be perceptive, timely, and accurate in one's interventions. Educators need to wrestle with how to develop mentoring relationships that facilitate reflection in today's cost-conscious higher education environment.

One of the ways that faculty may facilitate effective mentoring relationships is to model reflective practices in their interactions with students (Loughran, 1996). Faculty need to let their students see and hear them reflecting both in the classroom and in individual meetings. To the degree that reflection is often a personal process, modeling requires willingness and ability to self-disclose and to make oneself vulnerable. It also requires that faculty practice reflection in their daily lives—a process for which many educators have never received any formal training.

Maintaining an awareness of the present moment is a technique that can enhance one's ability to model reflection consistently and to facilitate it in others. Once again, however, most faculty have not been socialized by their own educational processes in the development of such awareness. Higher education socializes individuals to view time and process in the same way that it socializes them to view and understand knowledge—as cumulative or linear bricks in a wall rather than as nesting and interacting frameworks coexisting in creative interaction. Thus, faculty have learned to dissect the curriculum, the schedule, and departments and to view reality in neat boxes of a few independent variables in hypothetical relationship to several dependent variables. This distortion is honored in the name of science. Altering one's approach to incorporate an awareness of the present moment radically changes the lens through which one views the world. Such a lens is critical if reflective practices are to be incorporated as central to the teaching/learning process.

The use of reflective journals or writing portfolios (Loughran, 1996; Walker, 1985), critical incidents (Brookfield, 1990), and questions

answered alone or with a tutor (Seibert & Daudelin, 1999) are structured experiences designed to enhance learning gained through reflection. Peer groups is another type of structured experience to facilitate reflection; however, the effectiveness of this methodology has been mixed. Seibert & Daudelin (1999) found that subjects completing a reflection exercise in a group setting recorded less learning than subjects completing the same exercises alone or with a tutor. On the other hand, studies of action learning in the workplace, a technique that incorporates alternating periods of action and reflection, have documented that reflection in a group setting is an important part of the learning process (Marsick, 1990; Robinson & Wick, 1992). In both of these studies, however, a skilled facilitator was present to guide participants through the process of reflection and learning. Thus, if peer groups are used as a means of enhancing reflection, the keys may be to plan the process carefully in advance and to use a facilitator to ensure that the group achieves the intended learning from the experience.

In relation to the timing of reflection, there are two major time-aspects to the experiences upon which individuals reflect—reflection in the moment (called reflection-in-action or contemporaneous reflection) and reflection after the fact (called reflection-on-action or retrospective reflection). Much of the knowledge base of any given field is the result of scholars reflecting after the fact. These “after the fact” reflections serve as the basis for textbooks and journal articles, which are then consumed by others second-hand.

Educators as well as human beings in general also are better at reflecting after the fact than reflecting in the moment. Indeed, most of the methods to foster reflection recorded in the literature of higher education are focused on retrospective reflection. The use of journal writing, about which so much has been written, is just one example of a method to foster reflection after a developmental experience has occurred (Lukinsky, 1990; Riley-Doucet & Wilson, 1997; Zeichner & Liston, 1987). Such methods are both valuable and important in fostering reflection, but alone, they may be insufficient to accomplish the aims of reflective practice. There is also a need to foster in students the ability to reflect in the moment (i.e., during action). Reflection in the moment requires awareness of a dynamic process. It is, by its very nature fluid requiring one to think yet be aware of one’s thinking at the same time and to experience and yet be aware of how and what one is experiencing at the same time. Maintaining this delicate balance in the midst of a rapidly unfolding developmental experience can challenge the most skilled of educators. In addition, determining the

most effective methods of fostering it in students remains an ongoing dilemma.

Outcomes of Reflection

The expected outcomes of reflection are learning and enhanced personal and professional effectiveness. What is less clear is how to ascertain whether or not students have become more reflective or are reflecting more deeply as a result of a given educational experience. Evaluative methods are needed that will enable educators to assess the outcomes of the reflective process without minimizing its richness or complexity. These methods of evaluation are of necessity more qualitative than quantitative and may well be labor intensive for the faculty member. Sparks-Langer and Colton (1991) have recommended involving students in analyzing their own efforts to become more reflective. This approach may provide an effective solution in that it mitigates the work of the faculty member and drives students deeper into the reflective process as they evaluate their personal efforts in reflection.

Conclusion

Perhaps no other concept offers higher education as much potential for engendering lasting and effective change in the lives of students as that of reflection. Reflective practices that are intellectually credible can promote resiliency and resourcefulness in the face of life's dynamic challenges and encourage habits of individual and collective attention and analysis that can sustain higher education as it works to address the problems of society. To achieve these ends, however, the teaching community needs to clarify the concept of reflection and implement additional techniques that will enable students to learn and apply habits of reflective thought both in the classroom and beyond. In addition, there is a need for faculty to more deeply understand and apply reflective processes in both their personal and professional lives so that they can more effectively model such practices for their students.

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